Mastering iPhone Scroll Views

Session 102

These are confidential sessions—please refrain from streaming, blogging, or taking pictures.

Mastering iPhone Scroll Views

Now featuring fewer monsters

Josh Shaffer and Eliza Block
iPhone Framework and Application Engineers

You May Need a Scroll View If…

- …you have more than what will fit on a screen
- …you have more than what will fit in memory

What You'll Learn

- Configure—scrolling and zooming
- Interact—working with touches
- Optimize—efficiently displaying large content

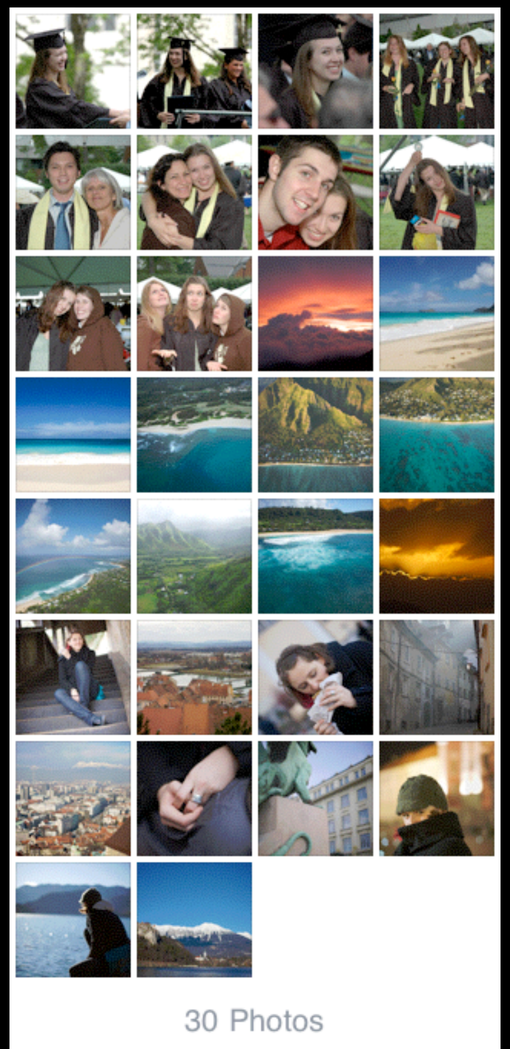
3G
9:42 AM
Bookmarks
Travel
Done
Expedia Travel
Travelocity
Fodors
City Search
Digital City
Lonely Planet
ViaMichelin
The New York Times - Tr...
Edit
1 Infinite Loop, Cupertino, Santa ...
Via Portofino
Via Palermo
Via San Marino
Northwood Dr
Junipero Serra Fwy
1 Infinite Loop
Mariani Ave
Mariani Ave Merritt Dr
Google
Search
Directions
YHOO 14.76 + 0.24
AAPL 122.95 + 3.46
NASDAQ 1,689.21 + 25.02
DOW J 8,331.32 + 46.43
S&P 500 893.07 + 9.15
GOOG 387.50 − 2.04
Open: 119.76
High: 123.53
Low: 119.70
Vol: 15.92M
P/E: 21.51
Market closed

Configure

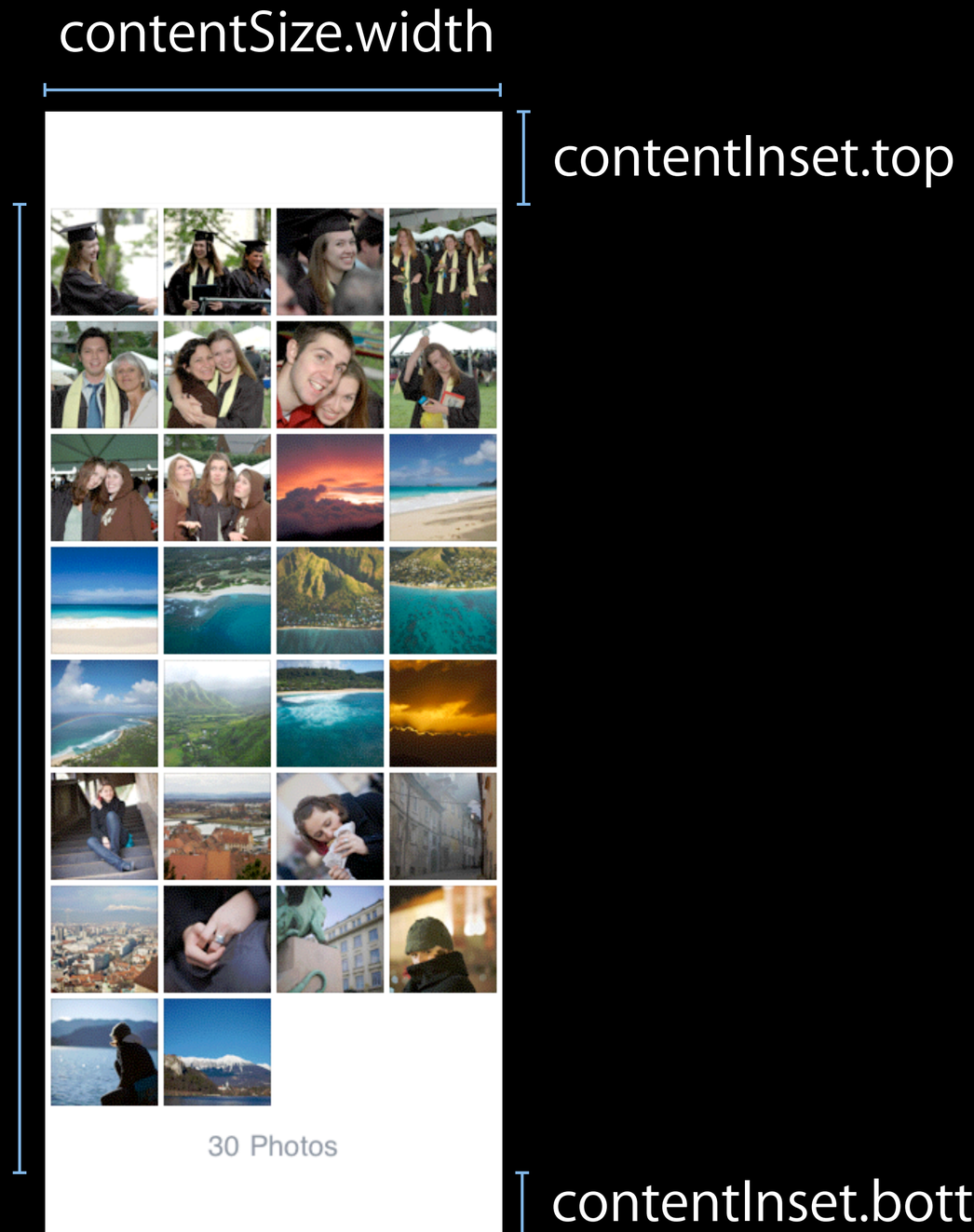
Content Size

contentSize.width

contentSize.height



Content Inset



Content Inset

Content Inset

contentInset.top

Content Inset

contentInset.top

contentInset.bottom

Scroll Indicator Insets

scrollIndicatorInsets.top

Content Offset

contentSize.width

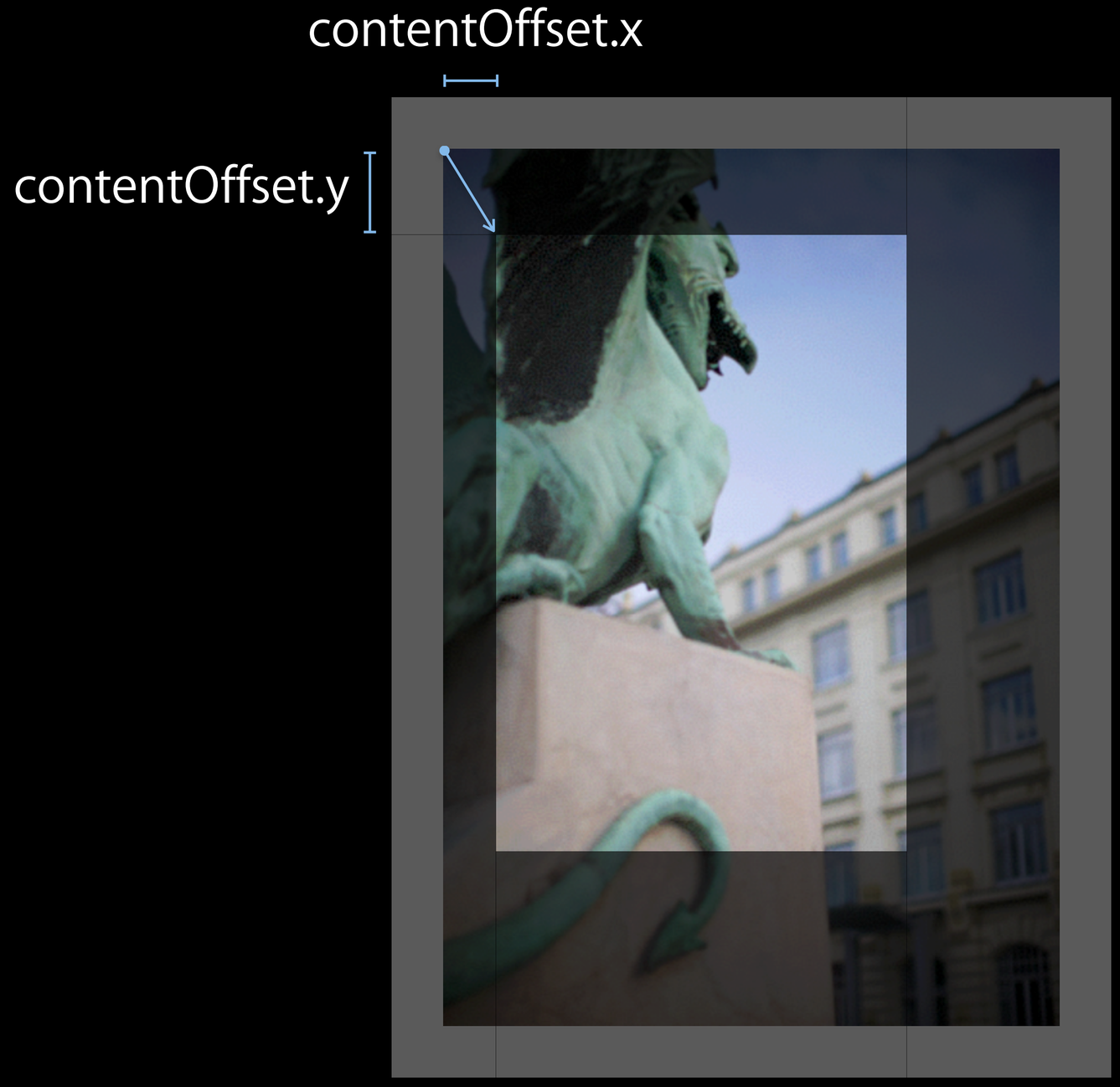
contentInset.top

contentSize.height

contentInset.bottom

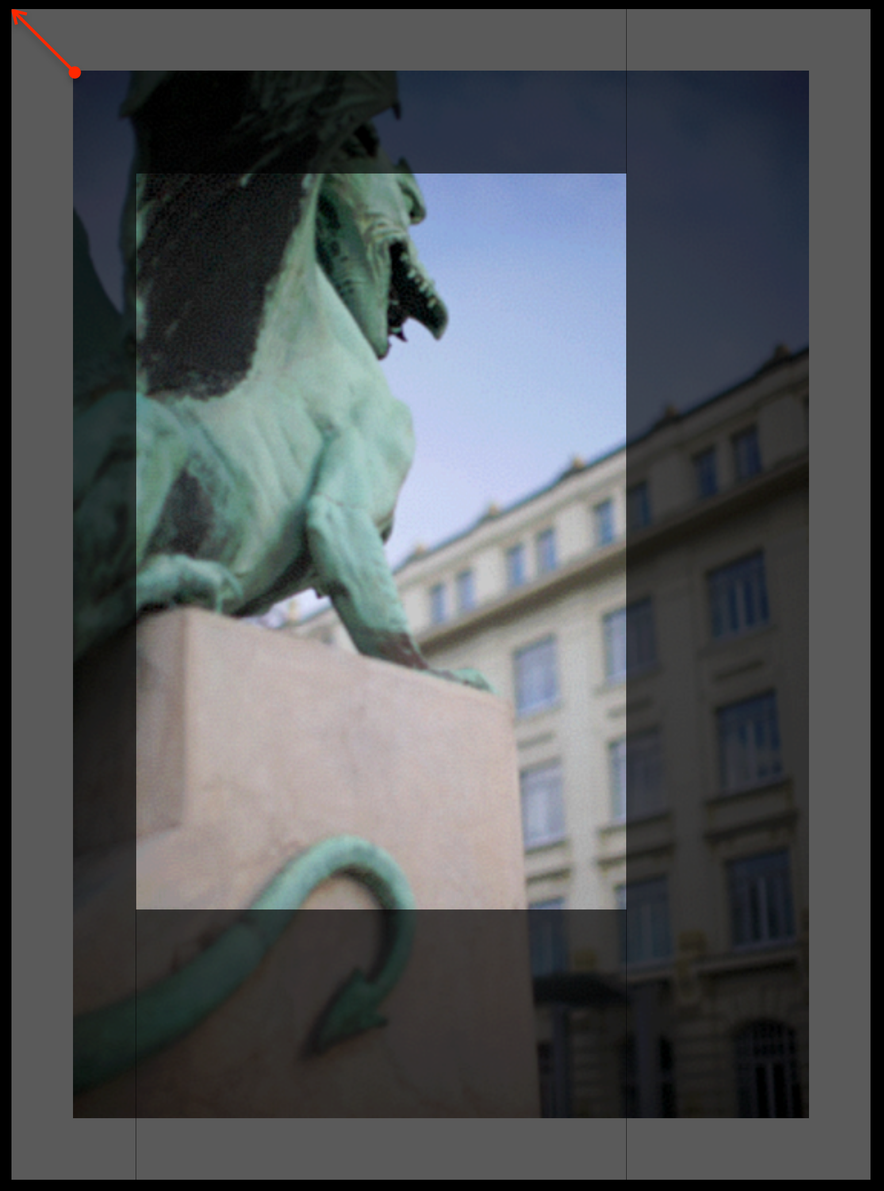
contentInset.left

contentInset.right


contentOffset.x
contentOffset.y

contentOffset.x
(-contentInset.left)

contentOffset.y
(-contentInset.top)



Zooming

Just add ~~water~~ a subview

```
float minimumZoomScale;
float maximumZoomScale;
```

Zooming

Just add ~~water~~ a subview

```
float minimumZoomScale;
float maximumZoomScale;

- (UIView*)viewForZoomingInScrollView:(UIScrollView*)scrollView
```

Set Zoom Scale

```
- (void)setZoomScale:(float)scale animated:(BOOL);
```

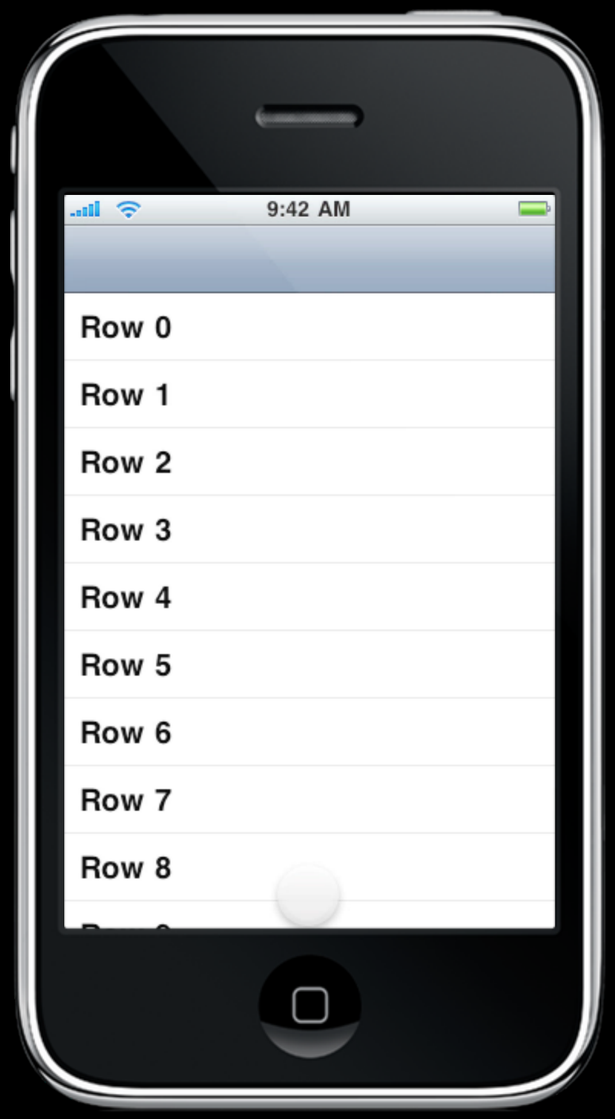
Zoom to Rect

```
- (void)zoomToRect:(CGRect)rect animated:(BOOL);
```

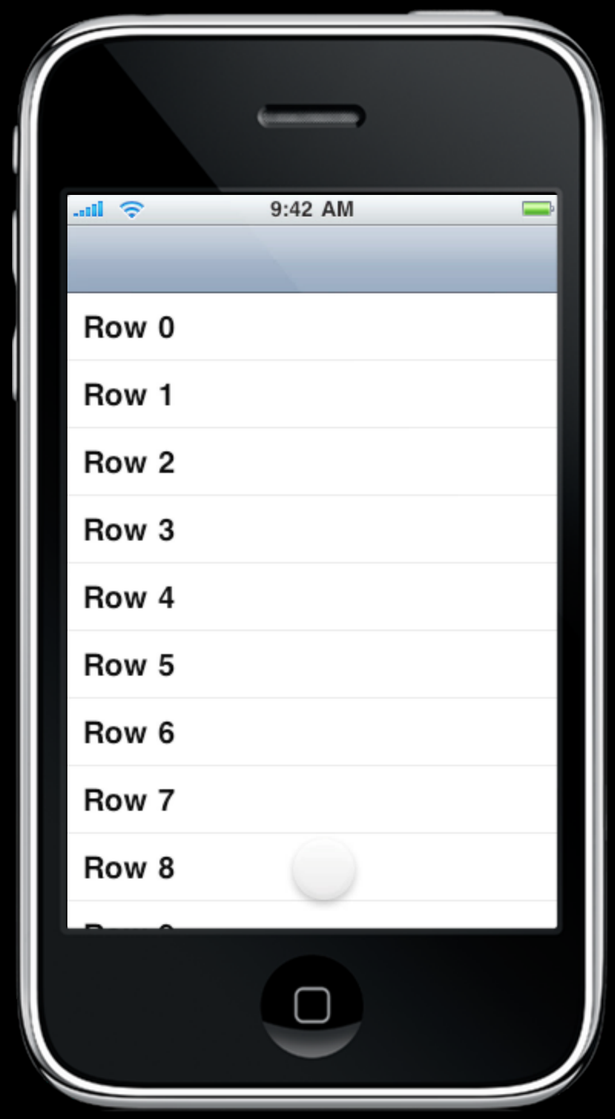
Zoom to Rect

```
- (void)zoomToRect:(CGRect)rect animated:(BOOL);
```

Deceleration Rate



UIScrollViewDecelerationRateNormal



UIScrollViewDecelerationRateFast

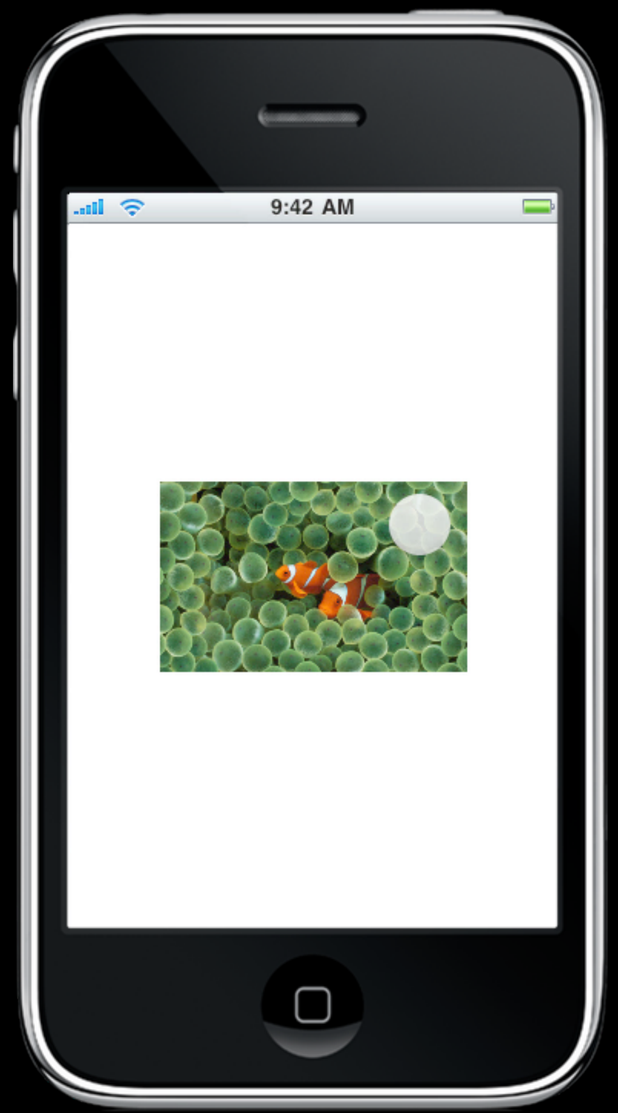
Demo

Eliza Block
iPhone Engineer

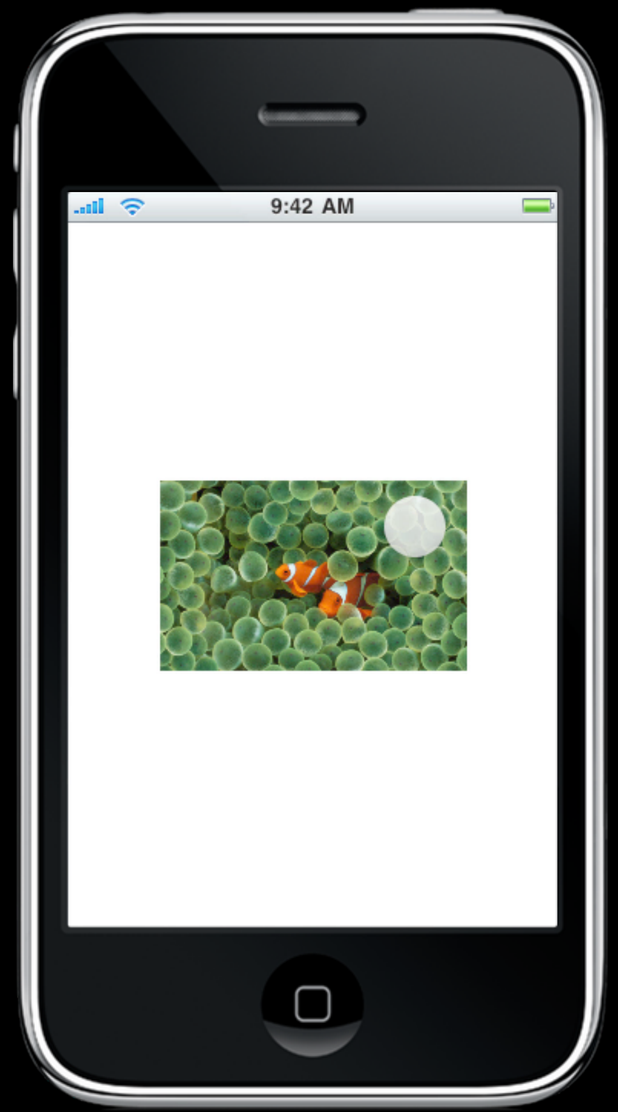
Interact

Delays Content Touches

Can Cancel Content Touches



Can Cancel Content Touches



Per-View Control

Subclass and override

```
- (BOOL)touchesShouldBegin:(NSSet *)touches
                  withEvent:(UIEvent *)event
              inContentView:(UIView *)view;
```

Per-View Control

Subclass and override

```
- (BOOL)touchesShouldBegin:(NSSet *)touches
                  withEvent:(UIEvent *)event
              inContentView:(UIView *)view;

- (BOOL)touchesShouldCancelInContentView:(UIView *)view;
```

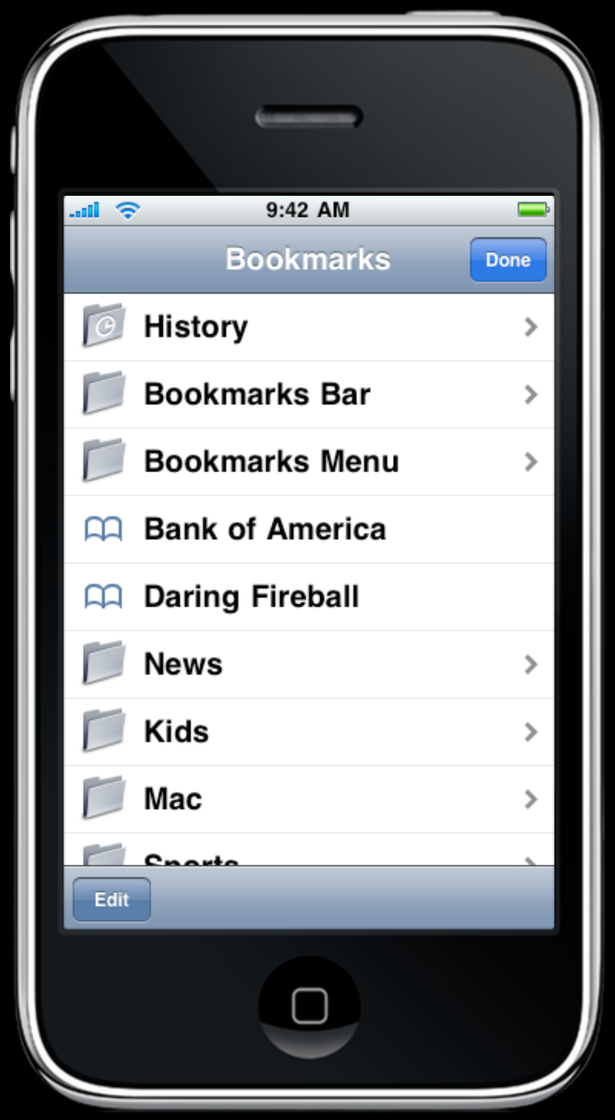
Demo

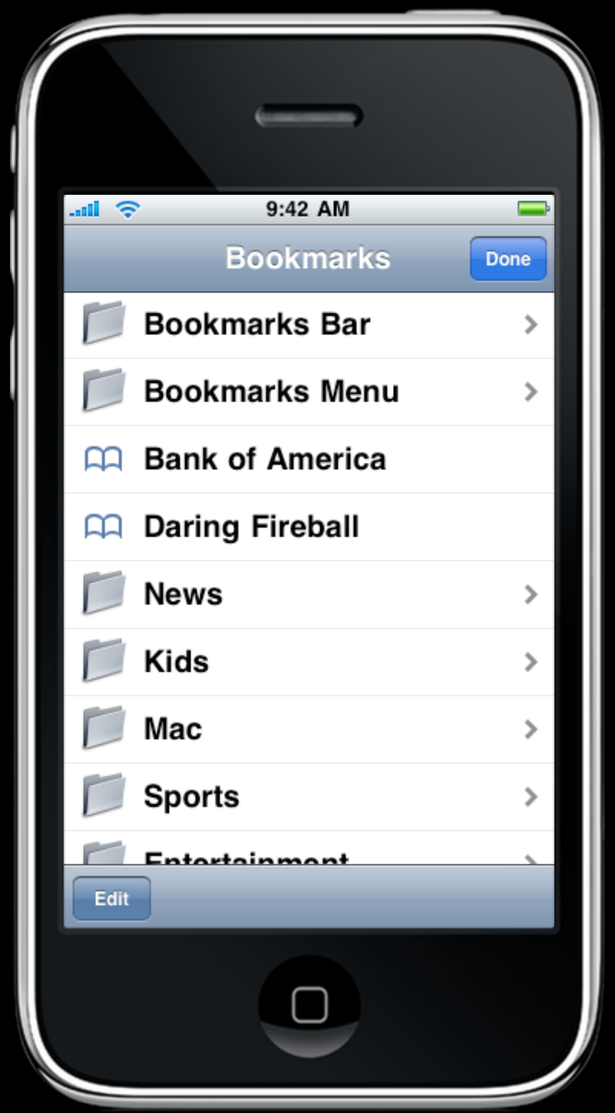
Eliza Block
iPhone Engineer

Optimize–Tiling Your Content

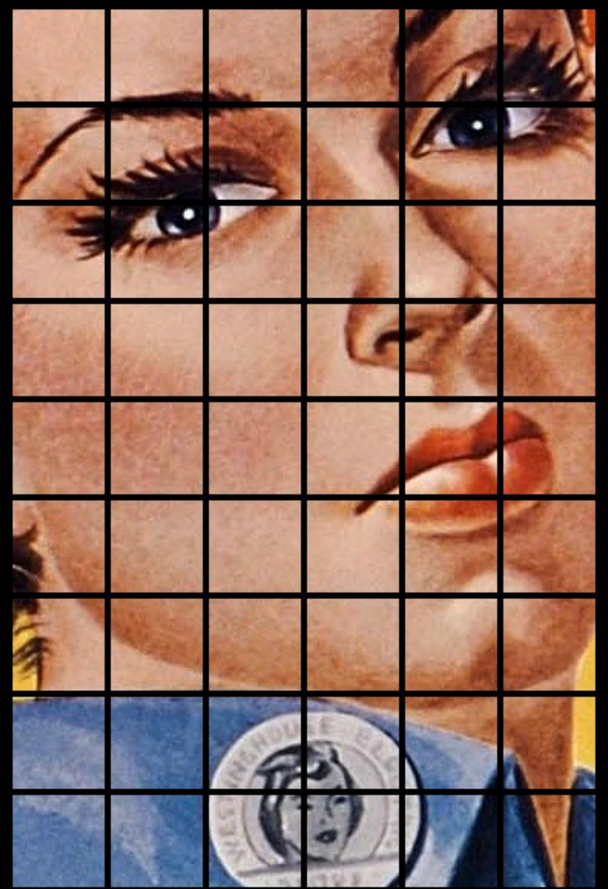
Why Tile?

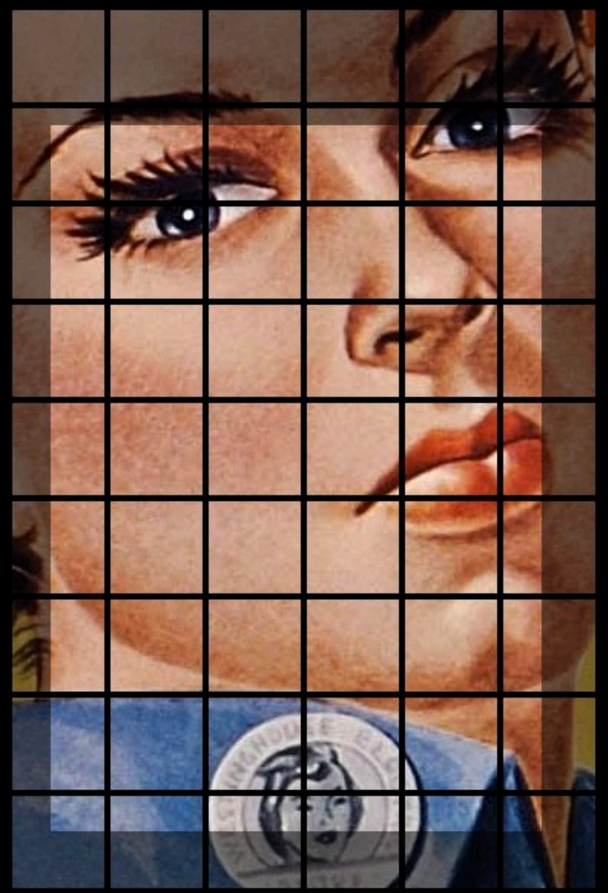
- Display more than will fit in memory
- Improve load time
- Download pieces of content as needed

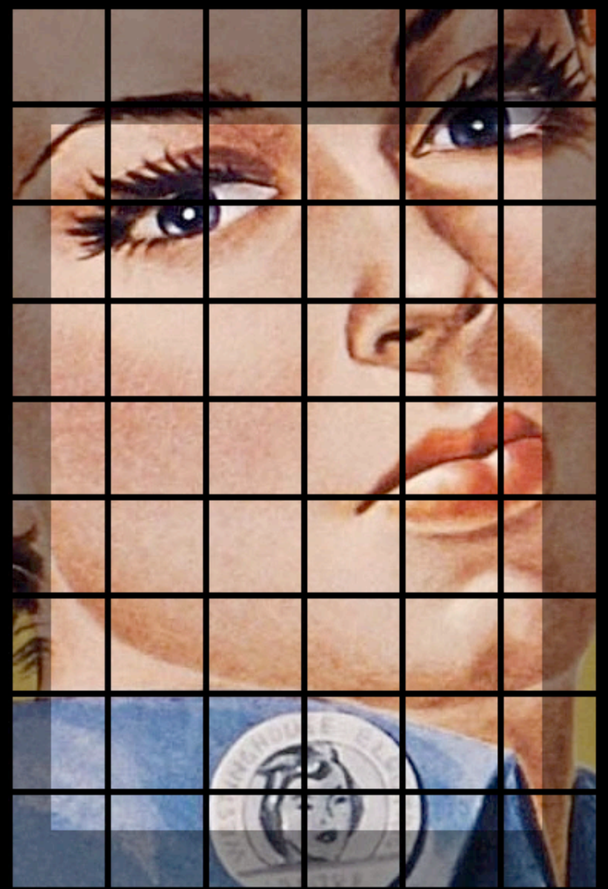

9:42 AM
Bookmarks
Done
History
Bookmarks Bar
Bookmarks Menu
Bank of America
Daring Fireball
News
Kids
Mac
Edit

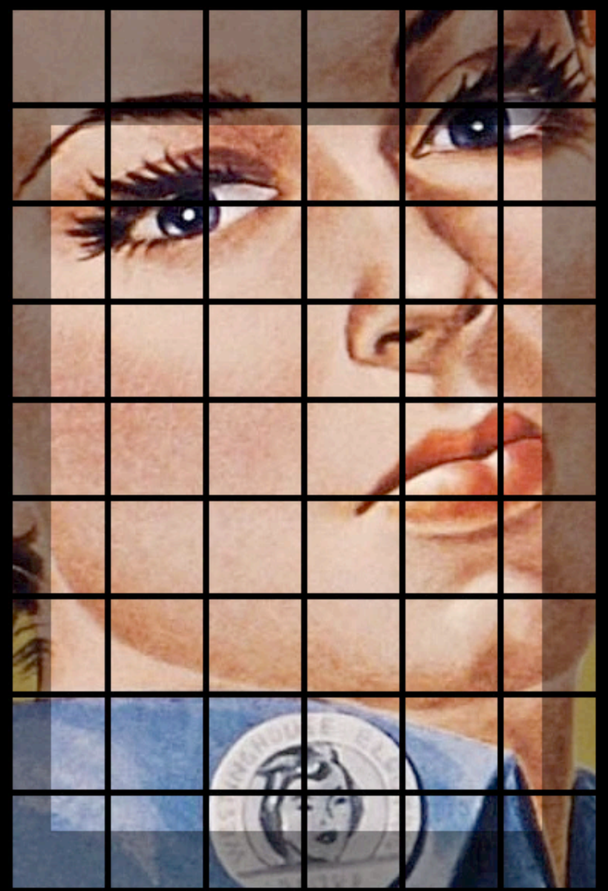

9:42 AM
Bookmarks
Done
Bookmarks Bar
Bookmarks Menu
Bank of America
Daring Fireball
News
Kids
Mac
Sports
Edit

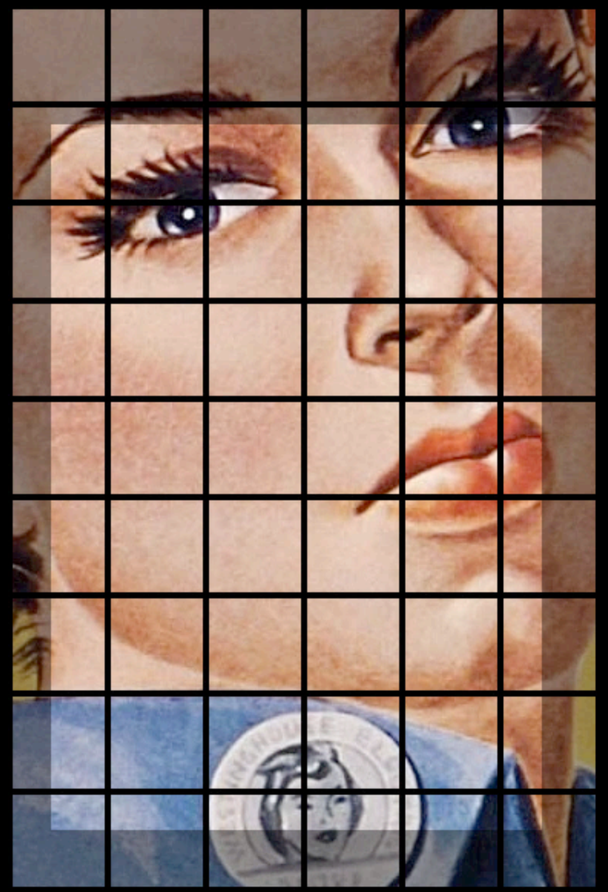
WESTINGHOUSE ELECTRIC











Where to Tile

Subclass, but call super!

```
- (void)layoutSubviews;

CGRectIntersectsRect([subview frame], [scrollView bounds]);
```

Demo

Eliza Block
iPhone Engineer

Nesting

9:42 AM
Messages
Monday
25
Calendar
Photos
YouTube
Stocks
280
Maps
73°
Weather
Clock
Calculator
Notes
Settings
Phone
Contacts
Mail
Safari
iPod

Nesting

- Cross-axis nesting is supported
- Same axis nesting user experience may change

Looking Back

- Alternatives—UITableView, UITextView, UIWebView
- Custom interaction—handle touches in subviews
- Save memory—load only what you need

More Information

Matt Drance
Application Frameworks Evangelist
mdrance@apple.com

Documentation
UIScrollView Class Reference
http://developer.apple.com/iphone/library/documentation/UIKit/Reference/UIScrollView_Class/Reference/UIScrollView.html

Related Sessions

Perfecting Your iPhone Table Views	Pacific Heights Tuesday 2:00PM
Processing Multi-Touch Events on iPhone	Pacific Heights Thursday 9:00AM

Labs

iPhone Table Views and Scroll Views Lab	iPhone Lab D Wednesday 3:30PM
iPhone Table Views and Scroll Views Lab	iPhone Lab D Thursday 2:00PM

Q&A

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